

# Inter (Part-I) 2021

Physics	Group-II	PAPER: I
Time: 20 Minutes	(OBJECTIVE TYPE)	Marks: 17

**Note:** Four possible answers A, B, C and D to each question are given. The choice which you think is correct, fill that circle in front of that question with Marker or Pen ink in the answer-book. Cutting or filling two or more circles will result in zero mark in that question.

- 1-1-  $[M^0 L^0 T^{-1}]$  refer to quantity:  
(a) Velocity (b) Frequency ✓  
(c) Time period (d) Force
- 2- The dimensions of torque are:  
(a)  $[MLT^{-2}]$  (b)  $[ML^{-1} T^{-2}]$   
(c)  $[ML^{-1} T^{-1}]$  (d)  $[ML^2 T^{-2}]$  ✓
- 3- Position vector of a point in x-z plane is given by:  
(a)  $y\hat{i} + z\hat{k}$  (b)  $x\hat{i} + y\hat{k}$   
(c)  $x\hat{i} + z\hat{k}$  ✓ (d)  $x\hat{i} + y\hat{j} + z\hat{k}$
- 4- Which of the following is the only scalar quantity?  
(a) Energy ✓ (b) Velocity  
(c) Force (d) Torque
- 5- SI unit of impulse is equivalent to:  
(a) Force (b) Momentum ✓  
(c) Torque (d) Velocity
- 6- The horizontal range of a projectile is:  
(a)  $\frac{2v_i \sin \theta}{g}$  (b)  $\frac{v_i^2 + \sin^2 \theta}{2g}$  ✓  
(c)  $\frac{v_i^2 \sin 2\theta}{g}$  (d)  $\frac{v_i \sin^2 \theta}{2g}$

- 7- Kilowatt hour is the unit of:  
 (a) Power ✓ (b) Work  
 (c) Force (d) Momentum
- 8- One radian is equal to:  
 (a)  $57.3^\circ$  ✓ (b)  $67.3^\circ$   
 (c)  $87.3^\circ$  (d)  $60^\circ$
- 9- The angular displacement per second is called angular:  
 (a) Acceleration ✓ (b) Rotation  
 (c) Velocity (d) Speed
- 10- Venturi meter is a device used to measure:  
 (a) Density of fluid (b) Speed of fluid ✓  
 (c) Viscosity of fluid (d) Pressure of fluid
- 11- If length of the simple pendulum is double, then its period increases:  
 (a) 1.44 times ✓ (b) 2 times  
 (c) 2.4 times (d) 3 times
- 12- The number of nodes between two consecutive antinode is:  
 (a) 1 ✓ (b) 2  
 (c) 3 (d) Zero
- 13- If 20 waves pass through the medium in 1 second with speed of  $20 \text{ ms}^{-1}$ , then the wavelength is:  
 (a) 20 m (b) 10 m  
 (c) 2 m (d) 1 m ✓
- 14- Bragg's equation is given by:  
 (a)  $d = \frac{2 \sin \theta}{n\lambda}$  (b)  $n = \frac{2d \sin \theta}{\lambda}$  ✓  
 (c)  $d = \frac{2n \sin \theta}{\lambda}$  (d)  $d = \frac{2\lambda \sin \theta}{n}$



15- For normal adjustment, length of telescope is:

(a)  $f_o + f_e$  ✓

(b)  $f_o - f_e$

(c)  $\frac{f_o}{f_e}$

(d)  $\frac{f_e}{f_o}$

16- Pressure of an ideal gas can be written in terms of its density:

(a)  $P = \rho < v^2 >$  (b)  $P = \frac{1}{3} \rho < v^2 >$  ✓

(c)  $P = \frac{2}{3} \rho < v^2 >$  (d)  $P = \frac{1}{2} \rho < v^2 >$

17- The efficiency of a carnot engine is:

(a) Infinite

(b) Zero

(c) Greater than one ✓

(d) Less than one

